



CECIL H. UNDERWOOD  
GOVERNOR

**DIVISION OF ENVIRONMENTAL PROTECTION**

1356 HANSFORD STREET  
CHARLESTON, WEST VIRGINIA

MICHAEL P. MIANO  
DIRECTOR

October 27, 1998

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
Z 316 375 782

Mr. Roy Peterson  
Enviropower, Inc.  
102 Pickering Way  
Exton, PA 19341-0200

RE: Chemical Leaman Tank Lines, Institute, WV  
EPA ID No: WVR000001719

SUBJECT: Notice of Deficiency: Permit Application  
Completeness Review

Dear Mr. Peterson:

The application submitted to this office on April 20, 1998, and the follow-up submittal of June 23, 1998, to clear the two major hurdles of this RCRA Post-Closure permitting care, still remains incomplete. (payment of fee and an agreement to length of post-closure care period)

The format for the Part B of the Permit Application sent to you on February 19, 1998, covers both forms of RCRA permitting, operational and post-closure care. Certain sections of this format are applicable to both types of permits and have not yet been covered in your submittals to this office. As stated in previous letters, the permit application must be a self contained document that will support the permit.

The Post-Closure Care Permit Application for Chemical Leaman Tank Lines, Inc. (CLTL), must include responses to the following sections of the Part B format:

- 1) *Section B, Facility Description: In your response, please provide information to support the upcoming permit and your certification of the application. This information must cover the ownership of this to be a permitted area and the present Quala Wash operation, CLTL, and Enviropower, Inc. relationship.*

Office of Waste Management, Hazardous Waste Management Section  
Telephone: (304) 558-5393 Fax: (304) 558-0256 TDD: (800) 422-5700

- 2) *Section C-1: Please provide hazardous constituent and concentration analytical data from the confirmation sampling following soil excavation of buried drum area and the stockpiled soil following bio-remediation.*
- 3) *Section E, Groundwater Monitoring: (The response to I-2b of format comes close).*
- 4) *In that the underlying premise of RCRA is based on preparedness and prevention, all permit applicants must demonstrate adequate security, personnel training, and a contingency plan.*

*Please respond to those parts of Sections F, G, and H of the format that covers these points.*

- 5) *Revision to Post-Closure Cost estimate to reflect the regulatory requirement of 30 year duration.*
- 6) *I-7, Financial Assurance Mechanism for Post-Closure Care*
- 7) *I-8, Liability Requirements*

Please provide the above requested supplements to the application within sixty (60) days of receipt of this letter. If you should have any questions, please feel free to contact me at the numbers provided on this letter.

Sincerely,



W. John Janicki, Permit Writer  
Hazardous Waste Management Section  
Office of Waste Management

/wjj

cc: Robert Greaves, US EPA Region III  
G. S. Atwal, OWM Permitting  
Mike Dorsey, OWM CAER  
Carroll Cather, OWM CAER  
Tom Fisher, OWM CAER  
Hank Haas, OWM CAER



**DIVISION OF ENVIRONMENTAL PROTECTION**

CECIL H. UNDERWOOD  
GOVERNOR

1356 Hansford Street  
Charleston, WV 25301-1401

JOHN E. CAFFREY  
DIRECTOR

July 10, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
P 825 017 978

Mr. Donald K. Emig  
EnviroPower, Inc.  
102 Pickering Way  
Exton, Pennsylvania 19341-0200

RE: Emergency Permit #HW0053 issued to Chemical  
Leaman Tank Lines, Institute, WV, EPA ID No:  
WVR000001719

Dear Mr. Emig:

Enclosed, please find the emergency permit that allows Chemical Leaman Tank Lines to treat contaminated soil in three (3) secure bio-remediation piles located adjacent to the site.

If you should have any questions, please feel free to contact me at the numbers provided on this letter.

Sincerely,

A handwritten signature in cursive script, reading "A. S. Talebi".

Ahmad S. Talebi, Engineer  
Hazardous Waste Management Section  
Office of Waste Management

AST:cm  
Enclosure

cc: Robert Greaves, US EPA Region III  
G. S. Atwal, OWM Permitting  
Mike Dorsey, OWM Compliance  
Henry Haas, OWM Inspector



CECIL H. UNDERWOOD  
GOVERNOR

DIVISION OF ENVIRONMENTAL PROTECTION  
1356 Hansford Street  
Charleston, WV 25301-1401

JACK E. CAFFREY  
DIRECTOR

**EMERGENCY PERMIT  
for  
TEMPORARY MANAGEMENT OF HAZARDOUS WASTE**

**WV Emergency Permit Number: HW0053**

**Effective Date: 07/10/97**

**Permittee: Chemical Leaman Tank Lines, Inc.  
Route 25, 1.5 miles W of Exit 50 off I-64  
Institute, WV**

**Expiration Date: 10/10/97**

**EPA ID No: WVR000001719**

Under the authority of Article 18, Chapter 22, West Virginia Code, this emergency permit is issued by the Division of Environmental Protection (DEP), Office of Waste Management (OWM), to Chemical Leaman Tank Lines, Inc., hereinafter called the "Permittee," located at Institute, Kanawha County, West Virginia. This permit is issued pursuant to 40 CFR 270.61, adopted by reference into the Hazardous Waste Management Regulations (HWMR) and promulgated under Article 18, Chapter 22, which allows the Permittee to treat contaminated soil by means of bio-remediation in three (3) secure bio-remediation piles located adjacent to the site and in accordance with the approved remedial work-plan submitted on April 4, 1997 along with an addendum received June 6, 1997 (Attachment A). The permittee shall comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (Parts I and II) and the applicable regulations pertaining to treatment of contaminated soil generated during implementation of Corrective Action and as specified in the permit or which are, by statute, self implementing.

  
\_\_\_\_\_  
B. F. Smith, P.E.

Chief

Office of Waste Management

7/10/97  
Date

AST:cm  
Enclosures

Office of Waste Management, Hazardous Waste Management Section  
Telephone: (304) 558-5393 FAX: (304) 558-0256 TDD: (800) 422-5700

## **PART I STANDARD CONDITIONS**

### **EMERGENCY PERMIT CHEMICAL LEAMAN TANK LINES, Inc.**

Part I of the permit sets forth the standard conditions that are applicable to all hazardous waste management facilities. The regulations applicable to permitting, Parts 260 through 264, 266, 268, and 270, of Title 40, Code of Federal Regulations, have been incorporated by reference into Sections 2 through 7, 9, 11, and 12, respectively, of the State Legislative Rules, Title 33, Series 20, Hazardous Waste Management Regulations (HWMR).

(NOTE: The regulatory citations in parentheses are incorporated into the permit by reference.)

#### **I-A EFFECT OF PERMIT (40 CFR §§270.4 and 270.30(g))**

This permit authorizes the management of hazardous waste expressly described in this permit. It does not authorize any other management of hazardous waste. The Office of Waste Management (OWM) will consider compliance with the terms of this permit to be compliance with the requirements of West Virginia's Hazardous Waste Management Act ("Act"), Article 18, Chapter 22 of the WV Code, and the regulations promulgated thereunder.

Compliance with the permit during its term constitutes compliance, for purposes of enforcement, with the Hazardous Waste Management Act (Article 18, Chapter 22 of the West Virginia Code), (hereinafter, the ACT), except for those requirements not included in the permit which become effective by statute, or which are promulgated under 40 CFR, Part 268, restricting the placement of hazardous waste in, or on, the land. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought by the U. S. Environmental Protection Agency (US EPA) under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 104, 106(a), or 107, of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. §9601 et. seq., commonly known as CERCLA); or any other law providing for protection of public health or the environment.

#### **I-B PERMIT ACTIONS (40 CFR §270.30(f))**

Pursuant to 40 CFR 270.43, the Chief may terminate this permit at any time without prior notice if the Chief determines that termination is appropriate to protect human health and/or the environment.

#### **I-C SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or if the application of any provision of this permit, to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

## **I-D DEFINITIONS**

For the purpose of this Permit, terms used herein shall have the same meaning as those set forth in the Hazardous Waste Management Regulations (47 CSR 35), Hazardous Waste Management Act (22-18), and 40 CFR, Parts 260 through 264, 266, 268, 270, and 279, which have been incorporated by reference, unless this permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. The following definitions also apply to this permit.

D-1 Chief means the Chief of the Office of Waste Management, Division of Environmental Protection;

D-2 Days mean except as otherwise provided herein, calendar days;

D-3 Hazardous Constituent means any constituent identified in Appendix VIII of 40 CFR, Part 261, or any constituent identified in Appendix IX of 40 CFR, Part 264;

D-4 Release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

## **I-E FAILURE TO SUBMIT RELEVANT AND/OR ACCURATE INFORMATION**

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Chief, OWM, the Permittee shall notify the Chief of such failure within seven (7) calendar days of becoming aware of such deficiency or inaccuracy. The Permittee shall submit the correct or additional information to the Chief within fourteen (14) days of becoming aware of the deficiency or inaccuracy (40 CFR, §270.30(l)(11)). Failure to submit the information required in this permit or misrepresentation of any submitted information is grounds for termination of this permit (40 CFR, §270.43).

## **I-F DUTIES AND REQUIREMENTS**

F-1 Duty to Comply (40 CFR §270.30(a))

The Permittee must comply with all conditions of this permit. Any noncompliance constitutes a violation of the Act and is grounds for enforcement and/or permit termination.

F-2 Permit Expiration (40 CFR §§270.61(b)(2))

This permit and all conditions herein shall be effective for a fixed term not to exceed ninety (90) days.

**F-3 Need to Halt or Reduce Activity Not a Defense (40 CFR §270.30(c))**

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**F-4 Duty to Mitigate (40 CFR §270.30(d))**

In the event of releases or noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impact on human health or the environment.

**F-5 Proper Operation and Maintenance (40 CFR §270.30(e))**

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality control/quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

**F-6 Inspection and Entry (40 CFR §270.30(l))**

The Permittee shall allow the Chief, OWM, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.

**F-7 Duty to Provide Information (40 CFR §§270.30(h))**

The Permittee shall furnish to the Chief, OWM, within a reasonable time designated by the Chief, any relevant information which the Chief, may request to determine compliance with this permit. The Permittee shall also furnish to the Chief, OWM, upon request, copies of records required to be kept by this permit.

**F-8 Anticipated Noncompliance (40 CFR §270.30(l)(2))**

The Permittee shall give advance notice to the Chief, OWM, of any planned changes in the permitted facility, or activity, which may result in noncompliance with permit requirements. Such notice does not constitute a waiver of the Permittee's duty to comply with permit requirements.

**F-9 Monitoring and Records (40 CFR 270.30(j))**

(A) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be an appropriate method from Appendix I of the HWMR. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical(s) Methods (SW-846, 3rd Edition).

(B) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, certification, or application. This period may be extended, by request of the Chief, at any time.

© Record of monitoring information shall include:

- 1) The date, exact place, and time of sampling or measurement;
- 2) Name of individuals who performed the sampling or measurement;
- 3) Dates analyses were performed;
- 4) Names of individuals who performed the analyses;
- 5) Analytical method used; and
- 6) Results of such analyses.

**F-10 Twenty-four (24) hour Reporting (40 CFR §§270.30(l)(6) and 270.33)**

The Permittee shall report to the Chief, OWM, any noncompliance which may endanger human health or the environment. Any such information shall be reported orally as soon as possible, but no later than twenty-four (24) hours from the time the Permittee becomes aware of the circumstances.



This report shall include the following:

- a. Information concerning the release of any hazardous waste which may endanger public drinking water supplies; and
- b. Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
  - (1) Name, address, and telephone number of the owner or operator;
  - (2) Name, address, and telephone number of the facility;
  - (3) Date, time, and type of incident;
  - (4) Name and quantity of material(s) involved;
  - (5) The extent of injuries, if any;
  - (6) An assessment of actual or potential hazard(s) to the environment and human health outside the facility, where this is applicable, and;
  - (7) Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided to the Chief, OWM, within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); steps taken to minimize impact on the environment; whether the noncompliance has been corrected, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. The Permittee need not comply with the five (5) day written notice requirement if the Chief, OWM, waives the requirement. Upon waiver of the five (5) day requirement, the Permittee shall submit a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

**F-11 Other Noncompliance (40 CFR §270.30(l)(10))**

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above within fifteen (15) days of when the Permittee becomes aware of the noncompliance. The reports shall contain the information listed in Condition I-F-10.

**F-12 Submittal of Reports or Other Information (40 CFR §§270.30(l)(7), (8), (9), and 270.31)**

All reports or other information required to be submitted pursuant to this permit shall be sent to:

Chief, Office of Waste Management  
1356 Hansford Street  
Charleston, WV 25301  
**ATTN: Hazardous Waste Management Section**

## **I-G SIGNATORY REQUIREMENT**

G-1 All reports or other information submitted to or requested by the Chief, OWM, his designee, or authorized representative, shall be signed and certified in accordance with 40 CFR §270.11.

G-2 Changes to Authorization. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or because a new individual or position has responsibility for the facility's compliance with environmental laws and permits, a new authorization satisfying the requirements shall be submitted to the Chief prior to or together with any reports, information, or applications to be signed by an authorized representative (40 CFR §270.11(c)).

## **I-H SECURITY (40 CFR 264.14)**

Compliance with 40 CFR 264.14 must be achieved by preventing the unauthorized entry, and minimizing the possibility for the unauthorized re-entry of persons onto the active portion of this facility at any time when wastes are present.

## **I-I REPORTING**

Within fifteen (15) days of permit expiration or termination, a complete report of activities at the site must be submitted to the Chief, OWM, for review and approval of the final closure of the project which will include closure of the bio-cells and disposal of the treated contaminated soil.

## **PART II SPECIFIC CONDITIONS**

### **Emergency Permit Chemical Leaman Tank Lines**

#### **A. FACILITY DESCRIPTION:**

This site is a tanker truck dispatching, washing, and maintenance facility currently owned and operated by Chemical Leaman and is located on West Virginia State Route 25 within an industrial region consisting primarily of chemical producers near Institute, WV, approximately fifteen (15) miles northwest of Charleston, WV. Figure 1 is the Site Location Map for this facility.

According to the USGS, St. Albans, WV quadrangle map and prior site investigations, the localized surface runoff appears to flow across the site toward the south southwest into a drainage swale on the north side of WV State Route 25. This runoff continues through a culvert under Route 25 into an unnamed tributary for a short distance to the Kanawha River. There is a tanker washing facility operating at the site which incorporates an industrial wastewater treatment system and discharges treated effluent under an existing WVDEP National Pollution Discharge Elimination System (NPDES) Permit.

The first of the two (2) areas of concern are the "Disposal Pit Area" located along the dirt access road to the upper area of the facility's wastewater treatment plant. A localized hot spot was delineated adjacent to the northern most neutralization tanks as defined by Organic Volatile Analyzer (OVA) concentrations in excess of 1000 PPM. Further definition of this area was performed by the installation of two (2) soil test borings and three (3) groundwater piezometers. Subsequent soil sampling and respective analytical results indicated that TCLP Priority Pollutant results were nondetect or below regulatory levels of concern. After discussions with the WVDEP, further site characterization, via backhoe test pits, will be performed around the area of potential concern in order to confirm no required remediation.

The second area of concern is the "Drum Burial Area." A subsurface investigation of the "Drum Burial Area" involved an initial MACRO and MICRO electromagnetic (EM) survey for identification of potential burial areas. The EM survey resulted in the identification of eight (8) potential drum disposal locations. Seven (7) drums of unknown contents were located within four (4) of eleven (11) excavation test pits. The location of the test pit excavations and discovered drums are symbolized in Figure 2. Two (2) drums of unknown content were identified by respective insignias or markings as "Union Carbide" and "Monsanto." The remainder had no identifiable markings or generation source reference.

According to the Permittee, the drum disposal areas identified were determined to be isolated areas rather than a single continuous disposal area with all identified drums located randomly and placed without consistent orientation. While the previous investigations confirmed the presence of buried drums at the site, no definitive estimate of the quantity of drums could be made without fully excavating the disposal areas.

Residual soil conditions south of the existing drum storage facility were noted as being fine sands and clays with moderate to low moisture content. Bedrock was encountered at depths ranging from 4.5 to 6.0 feet below ground level.

**B. DESCRIPTION OF WASTE:**

There is a total volume of 62,300 ft<sup>3</sup> of contaminated soils placed in eight (8) bio-cells at the site. The contaminated soil was generated during excavation of buried drums at the site during remedial action activities in August, 1995.

**C. PREPAREDNESS AND PREVENTION:**

C-1 CONTINGENCY PLAN: The Permittee shall develop and keep, on site, a contingency plan to implement in case of an emergency, as described by 40 CFR 264.56, whenever there is an imminent or actual emergency situation (which includes release of hazardous waste or constituents, a fire, or explosion), which threatens, or could threaten, human health and/or the environment.

C-2 REQUIRED EQUIPMENT: The Permittee shall equip the site with equipment as set forth in the contingency plan (e.g., OVA, personnel safety, emergency alarm, etc.) as required by 40 CFR 264.32. The Permittee shall test and maintain the equipment specified in the contingency plan as necessary to assure its proper operation in time of emergency as required by 40 CFR 264.33. A record of tests or inspections must be maintained in a log at the site.

C-3 HEALTH AND SAFETY PLAN: The Permittee shall prepare and implement a Health and Safety Plan for all personnel at the site which meets or exceeds the Occupational Safety and Healthy Administration (OSHA) 29 CFR 1910 and 54 FR 9294 regulations.

**D. TREATMENT PERFORMANCE:**

The Permittee shall treat the excavated and stored contaminated soils within bio-cells in accordance with the approved Bio-Remediation Plan included with this permit as attachment A.

**E. CLOSURE PERFORMANCE**

The Permittee shall perform closure of the bio-cells and the surrounding area in accordance with the approved Closure Plan included with this permit as Attachment A.

## ATTACHMENT A

JUN - 9 1997

Via Air Borne Express

DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF WASTE MANAGEMENT  
COMPLIANCE MONITORING & ENFORCEMENT

June 6, 1997

Mr. Ahmad S. Talebi  
Engineer  
State of West Virginia  
Division of Environmental Protection  
Office of Waste Management  
Compliance Monitoring and Enforcement  
1356 Hansford Street  
Charleston, WV 25301-1401

**RE: Addendum to Work Plan to Complete Remediation of Biocells at  
Chemical Leaman Tank Lines, Inc. Terminal in  
Institute, WV EPA ID No.: WVR 000 001 719**

Dear Ahmad:

This is to transmit the Addendum to the April 18, 1997 Work Plan which details our plans to complete remediation of the biocells at the Chemical Leaman Tank Lines, Inc. (CLTL) terminal in Institute, West Virginia. This Addendum documents the changes to the Work Plan discussed at our meeting on May 29, 1997. Based on the results documented in the Biocell Sampling and Analysis Report, the bulk of the soils in the biocells currently meet LDRs, however, additional bioremediation is required for soils in seven of the eight biocells. As a result, in accordance with the Consent Decree, we are requesting an Emergency Permit to complete the bioremediation work. A check for \$500 to cover the fee for the Emergency Permit was transmitted in our April 18, 1997 letter.

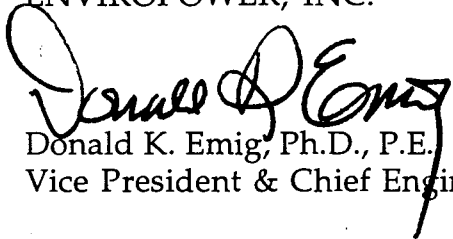
The additional bioremediation work will be completed in accordance with the April 18, 1997 Work Plan and the attached Addendum. Based on the low levels of contaminants in the soils that remain to be bioremediated, it is expected that the bioremediation process will be completed within the 90 day Emergency Permit period.

As requested in our meeting on May 29, 1997, we had our laboratory check all surrogate recoveries for the laboratory samples reported in the March 1997 Biocell Sampling and Analysis Report and all surrogate recoveries met acceptance criteria in the Contract Laboratory Program (CLP). We also checked the list of analytes reported and found them to be consistent with the list approved in the January 22, 1997 Sampling and Analysis Plan.

As was explained to you in recent correspondence, our terminal is in need of additional parking area. We have a business opportunity that hinges on our ability to provide additional parking. Timing is also critical with regard to optimal treatment conditions. As you know, the bio-degradation process works best in warm temperatures. For this reason we would like to begin the additional bioremediation by July 1, 1997 so that it can be completed by the end of September. Therefore we need an Emergency Permit as soon as possible. Please notify us as to when we may expect to receive the Emergency Permit. If you have any questions, please call Roy Peterson or me at 610-363-4498.

Very truly yours,

ENVIROPOWER, INC.



Donald K. Emig, Ph.D., P.E.  
Vice President & Chief Engineer

Enclosures

cc: H. Michael Dorsey, WVDEP OWM Compliance  
Carroll Cather, WVDEP OWM Compliance  
Tom Fisher, WVDEP OWM Compliance  
Henry Haas, WVDEP OWM Compliance  
Rick Minsterman, Weavertown Environmental Group

### **Addendum to April 18, 1997 Work Plan**

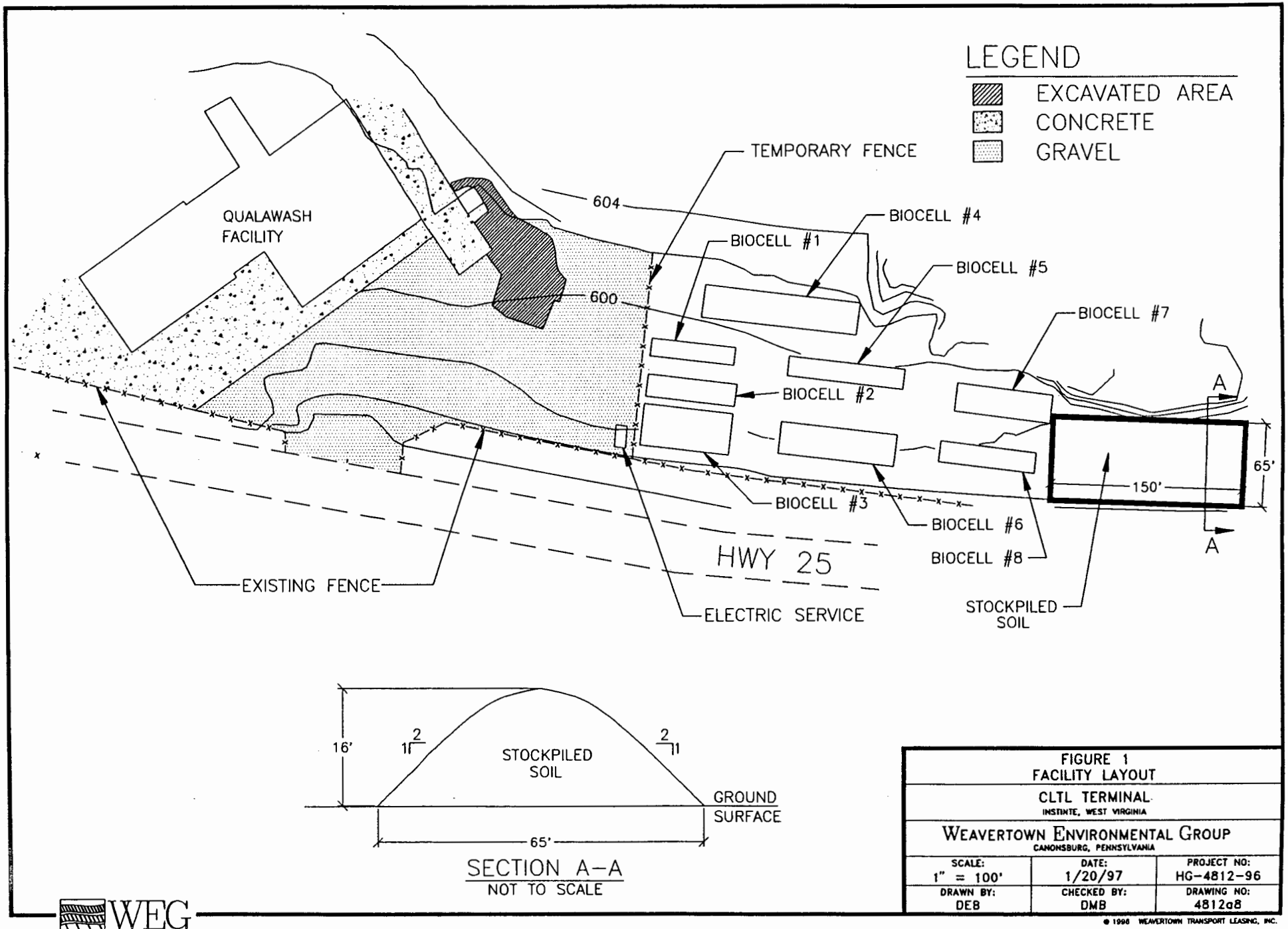
As explained in the April 18, 1997 Work Plan submittal, to initiate the additional remediation work, we will remove the soils that already meet LDRs from the biocells and stockpile them onsite. The soils that require additional bioremediation will then be consolidated into existing biocells 4 and 7 for further treatment. We have changed the biocells to be operated for further treatment to provide the necessary additional volume capacity (see below). These soils and the existing soils in biocells 4 and 7 requiring additional treatment will be bulked with wood chips to maximize the potential for air circulation during treatment. Additional air distribution piping will be placed in these biocells and the existing air supply system will be put back in working order to supply oxygen to the soils. Microbes, nutrients, and wood chips will be added to the soils to be treated as they are placed in biocells 4 and 7. These measures will provide for maximum treatment efficiency.

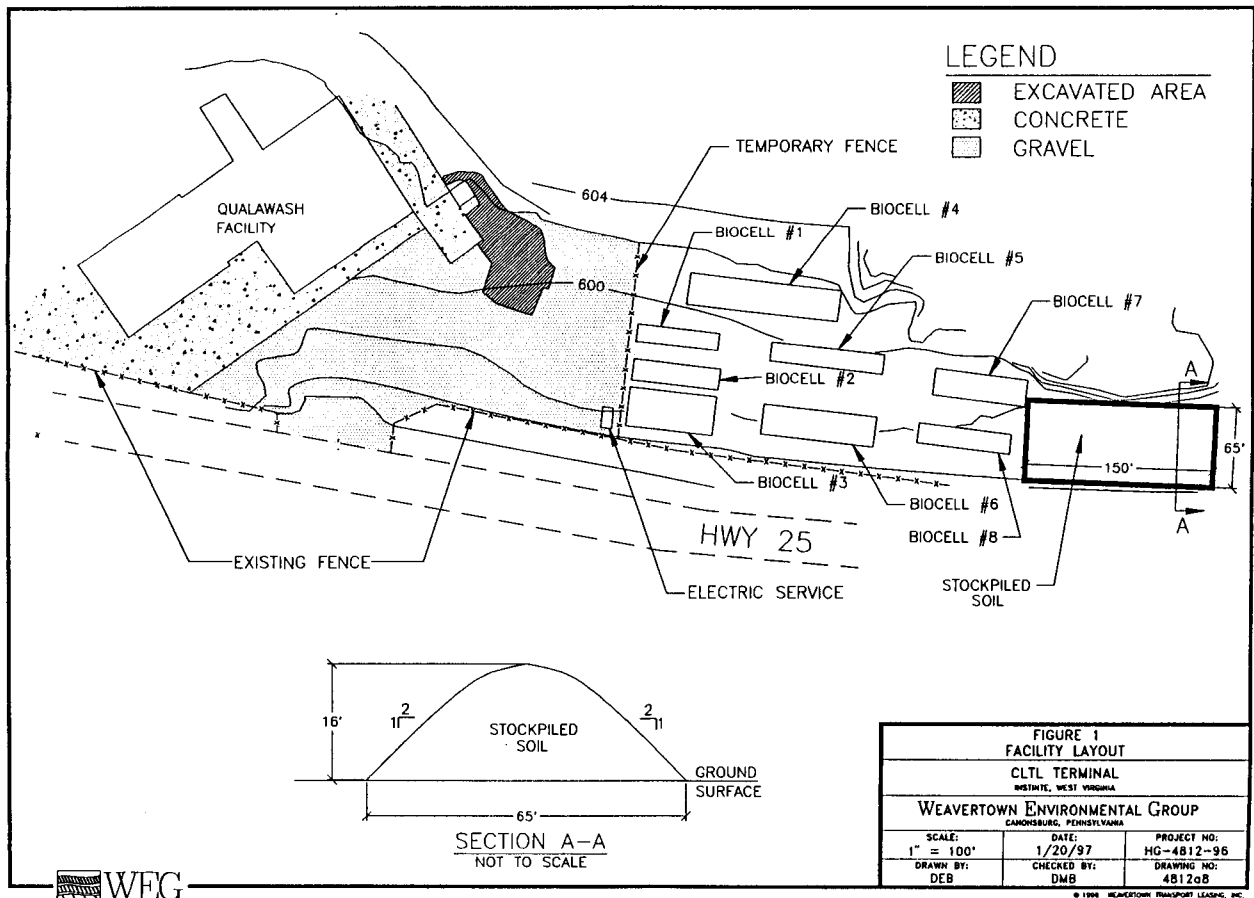
The following issues related to the proposed April 18, 1997 Work Plan were discussed in our May 29, 1997 meeting and the agreed upon modifications are:

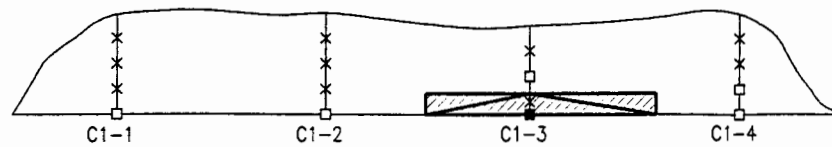
- All the treated soils will be placed in a storage pile to be constructed in an area to the East of the existing biocells. The location of this pile and a section with design details is shown on Figure 1. The surface of the completed pile will be seeded for stabilization and erosion controls and run-on diversion berms will be placed around the pile as required. The treated soils storage pile will be placed on the plastic sheets covering the existing biocells.
- The initial determination of treated soils versus those requiring additional treatment will be based on the sampling results that were documented in the March Biocell Sampling and Analysis Report. A delineation of the those soils requiring additional treatment was provided on the pile sections figures 3, 4 and 5 in the April 18, 1997 Work Plan. This delineation has been revised to "square off" areas of the soils to be further treated to make excavation easier in the field as is illustrated in the attached revised sections drawings. This has resulted in additional soil to be treated and therefore we have changed the biocells to be operated to 4 and 7 which are strategically located in back of the property and large enough to handle the new projected volumes (480 cubic yards). All treated soils will ultimately be placed in the storage pile to the East of the existing biocells in approximate one foot lifts and machine compacted.



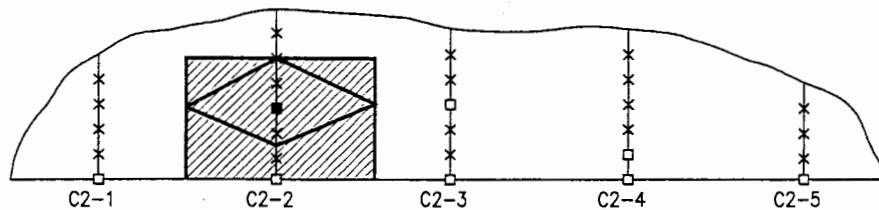
- Visual screening will be performed during excavation of the treated soils from the existing biocells to look for hot spots between previously screened and sampled areas that may have been missed during the last sampling event. Screening parameters will include visual staining and Hnu readings. In those areas with visual staining, grab samples will be taken and analyzed with the Hnu for head space volatiles. These samples will not be staged for further treatment if the Hnu reading is below 30 ppm. This is the Hnu reading that correlated with laboratory analyzed samples which were below LDR values in the last sampling event (sample C4-2-58, with a head space level of 36.4 ppm, is the first sample on the table on page 9 of the March 1997 Biocell Sampling and Analysis Report, which lists all the non-zero headspace readings and the corresponding Total VOC and SVOC totals, that had a volatile constituent that exceeded the LDR). The areas with Hnu readings above 30 ppm will be excavated and placed in biocells 4 or 7 for further treatment. The Hnu will be calibrated on-site daily during screening. This method will also be used to screen the soils above soils requiring additional treatment based on the last sampling event to locate hot spots in these areas.
- The wood chips to be used to bulk the soil prior to treatment will be large enough to easily exclude them from future confirmatory samples. Two levels of piping will be provided in each biocell. This piping will provide adequate air circulation to all soils; therefore soil tilling will not be done.
- Based on the low levels of contaminants in the soils that remain to be bioremediated, it is expected that the bioremediation process will be completed within the 90 day Emergency Permit period. Any soils that cannot be bioremediated within that time period will be sent off-site for disposal.



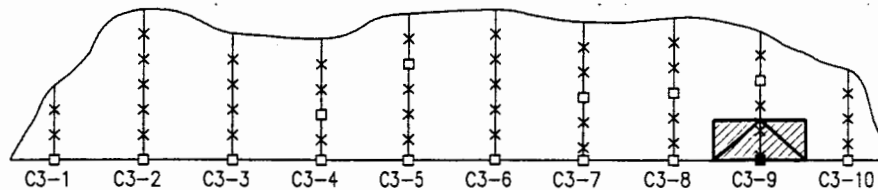




CROSS SECTION BIOCELL 1  
LOOKING NORTH



CROSS SECTION BIOCELL 2  
LOOKING NORTH



CROSS SECTION BIOCELL 3  
LOOKING NORTH

BIOCELL 1	
BORING NO.	DEPTH
C1-1	48"
C1-2	48"
C1-3	42"
C1-4	48"

BIOCELL 2	
BORING NO.	DEPTH
C2-1	60"
C2-2	82"
C2-3	72"
C2-4	72"
C2-5	46"

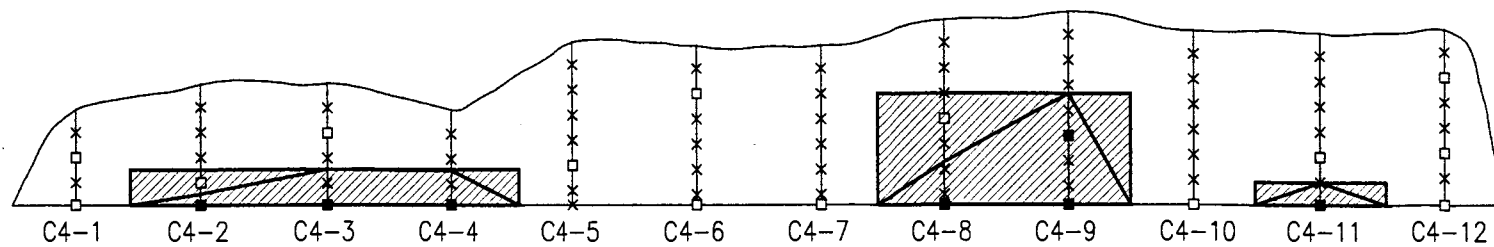
BIOCELL 3	
BORING NO.	DEPTH
C3-1	36"
C3-2	72"
C3-3	60"
C3-4	58"
C3-5	70"
C3-6	72"
C3-7	66"
C3-8	68"
C3-9	62"
C3-10	44"

#### LEGEND

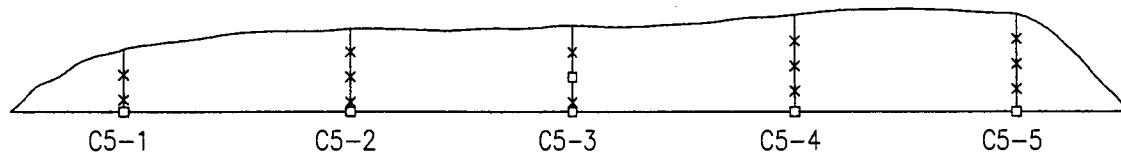
- × SAMPLES NOT ANALYZED
- SAMPLES ANALYZED AND ALL CONCENTRATIONS OF VOCs AND SVOCs ARE BELOW CORRESPONDING LDRs.
- SAMPLES ANALYZED AND ONE OR MORE VOCs OR SVOCs ARE ABOVE CORRESPONDING LDRs.
- ▨ SOILS CONTAINING ONE OR MORE VOCs OR SVOCs ABOVE LDRs.

FIGURE 3 BIOCELLS 1, 2, AND 3		
CLTL TERMINAL INSTITUTE WEST VIRGINIA		
WEG ENGINEERING PITTSBURGH, PENNSYLVANIA		
SCALE: H: 1"=10', V: 1"=5'	DATE: 6/4/97	PROJECT NUMBER: HG-4812-96
DRAWN BY: DEB	CHECKED BY: RDM	DRAWING NO: 4812dwg4

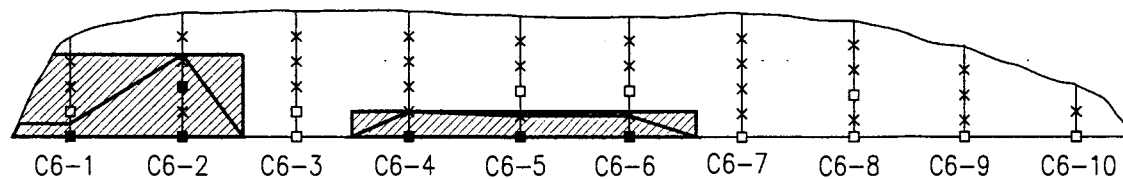
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CROSS SECTION BIOCELL 4  
LOOKING NORTH



CROSS SECTION BIOCELL 5  
LOOKING NORTH



CROSS SECTION BIOCELL 6  
LOOKING NORTH

BIOCELL 4	
BORING NO.	DEPTH
C4-1	46"
C4-2	58"
C4-3	58"
C4-4	45"
C4-5	78"
C4-6	76"
C4-7	76"
C4-8	88"
C4-9	92"
C4-10	83"
C4-11	82"
C4-12	84"

BIOCELL 5	
BORING NO.	DEPTH
C5-1	30"
C5-2	40"
C5-3	41"
C5-4	46"
C5-5	47"

BIOCELL 6	
BORING NO.	DEPTH
C6-1	48"
C6-2	60"
C6-3	60"
C6-4	60"
C6-5	58"
C6-6	58"
C6-7	59"
C6-8	56"
C6-9	44"
C6-10	24"

#### LEGEND

- × SAMPLES NOT ANALYZED
- SAMPLES ANALYZED AND ALL CONCENTRATIONS OF VOCs AND SVOCs ARE BELOW CORRESPONDING LDRs.
- SAMPLES ANALYZED AND ONE OR MORE VOCs OR SVOCs ARE ABOVE CORRESPONDING LDRs.
- ▨ SOILS CONTAINING ONE OR MORE VOCs OR SVOCs ABOVE LDRs.

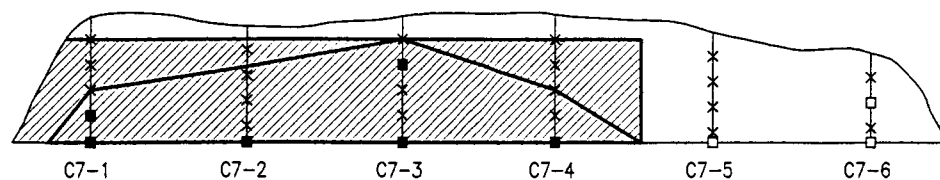
FIGURE 4  
BIOCELLS 4, 5, & 6

CLTL TERMINAL  
INSTITUTE, WEST VIRGINIA

WEG ENGINEERING  
PITTSBURGH, PENNSYLVANIA

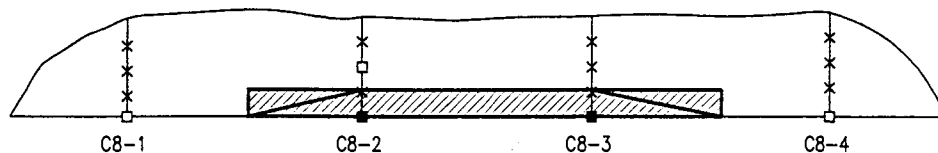
SCALE: H: 1"=10', V: 1"=5'	DATE: 6/4/97	PROJECT NUMBER HG-4812-95
DRAWN BY: DEB	CHECKED BY: RDM	DRAWING NO: 4812dwg9

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CROSS SECTION BIOCELL 7  
LOOKING NORTH

BIOCELL 7	
BORING NO.	DEPTH
C7-1	60"
C7-2	55"
C7-3	60"
C7-4	60"
C7-5	52"
C7-6	42"



CROSS SECTION BIOCELL 8  
LOOKING NORTH

BIOCELL 8	
BORING NO.	DEPTH
C8-1	46"
C8-2	48"
C8-3	48"
C8-4	50"

#### LEGEND

- × SAMPLES NOT ANALYZED
- SAMPLES ANALYZED AND ALL CONCENTRATIONS OF VOCs AND SVOCs ARE BELOW CORRESPONDING LDRs.
- SAMPLES ANALYZED AND ONE OR MORE VOCs OR SVOCs ARE ABOVE CORRESPONDING LDRs.
- ▨ SOILS CONTAINING ONE OR MORE VOCs OR SVOCs ABOVE LDRs.

FIGURE 5  
BIOCELLS 7 AND 8

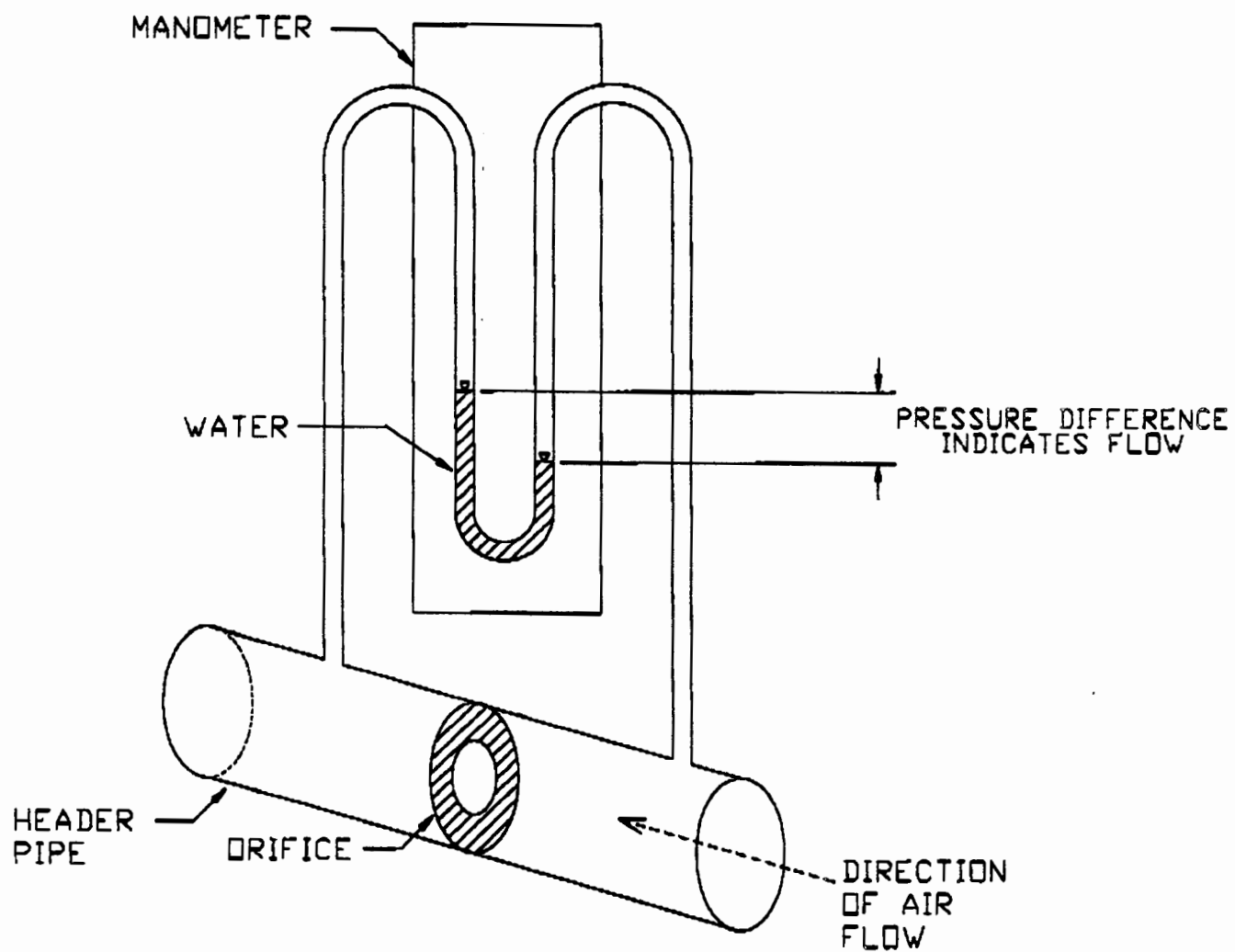
CLTL TERMINAL  
INSTITUTE, WEST VIRGINIA

WEG ENGINEERING  
PITTSBURGH, PENNSYLVANIA

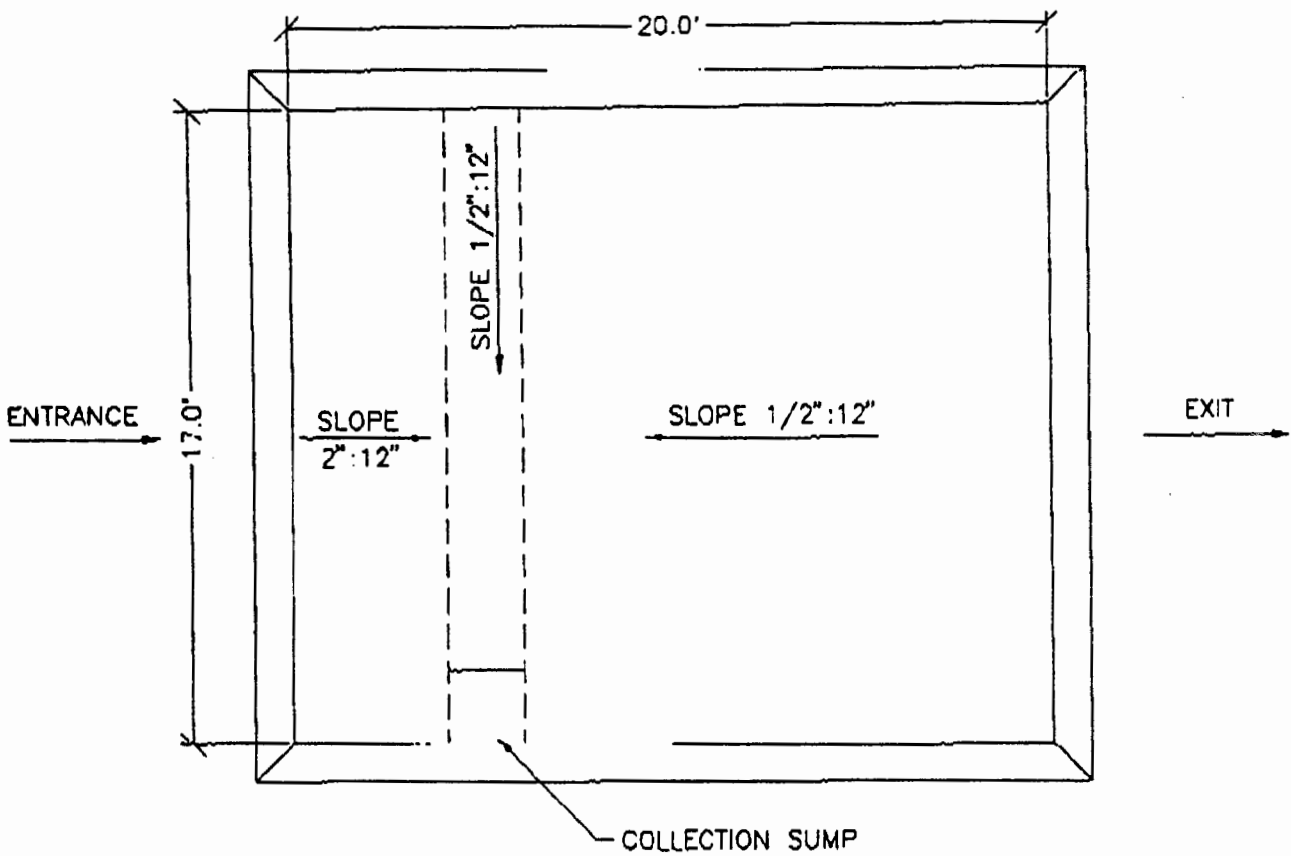
SCALE: H: 1"=10', V: 1"=5'	DATE: 6/4/97	PROJECT NUMBER: HG-4812-95
DRAWN BY: DEB	CHECKED BY: RDM	DRAWING NO: 4812dwg6

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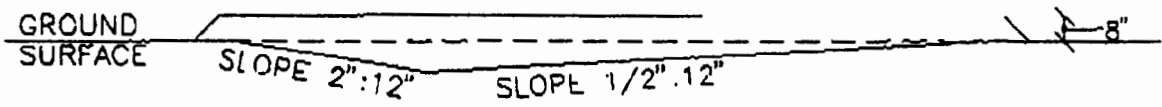
5-29-97



May 29, 97



PLAN



CROSS SECTION

GENERAL NOTES

1. THE DECON PAD BASE AND BERM WILL BE COVERED WITH THREE(3) LAYERS OF 6mil PLASTIC.
2. BERM TO BE CONSTRUCTED OF SOIL.

DECONTAMINATION PAD		
CHEMICAL LEAHMAN TANK LINES, INC.		
INSTITUTE, WEST VIRGINIA		
WEG ENGINEERING		
PITTSBURGH, PENNSYLVANIA		
SCALE: 1"=5'	DATE: 5/27/97	PROJECT NO: BR-4812-96
DRAWN BY: DEB	CHECKED BY: RDM	DRAWING NO: 4812DECO



## FULL-SCALE ON-SITE BIOREMEDIATION OF PAH IN SOIL

Hanna Blaszkiewicz, Mark Connolly, and Margaret Mazur

**ABSTRACT:** Approximately 1,600 m<sup>3</sup> of soil contaminated with polycyclic aromatic hydrocarbons (PAH) was identified at a government works depot at Geelong, 80 km southwest of Melbourne, Australia. Removal or remediation of the PAH was required to enable residential redevelopment of the 9,000 m<sup>2</sup> property. The PAH contamination was present in fill overlying uncontaminated natural clay. All 16 PAH compounds for which analysis was carried out were present in the fill, and the start-point concentrations and cleanup targets are shown below.

	Start point (mg/kg)	Target (mg/kg)
Benzo(a)pyrene	5	<0.3
Dibenzoanthracene	0.4	<0.3
Total PAH	48.4	<20

Preliminary study had shown us that bioremediation of the PAH was technically feasible, with cometabolism likely to be an important mechanism. A cost estimate comparison was made of 3 cleanup methodologies with the following results:

- Excavation, disposal and backfilling with clean fill: US\$114,000
- Burial 1 m deep on site: US\$22,000
- Bioremediation: US\$22,000

Commencing in June 1996 all fill was stripped and stockpiled and benchmark samples were taken from the underlying natural clay. The fill was then respread, along with 400 m<sup>3</sup> of mulch and 1 ton of nitrogen and phosphorus fertiliser. No water was added at this stage as winters in southern Australia, although mild, are moist to wet. Landfarm setup was not completed until January 1997, owing to unseasonably wet conditions. Once the landfarm was established, start-point measurements were made of O<sub>2</sub>/CO<sub>2</sub> concentrations and PAH concentrations across the landfarm. O<sub>2</sub>/CO<sub>2</sub> concentrations were also measured before and after weekly cultivation. PAH concentrations in the landfarm and in the underlying natural clay were monitored monthly. The outcomes of the PAH remediation will be presented at the Symposium.

## BIOPILE TREATMENT OF PETROLEUM HYDROCARBON-CONTAMINATED SOIL AT THE MARINE CORPS BASE, HAWAII

*F. M. von Fahnestock*, G. B. Wickramanayake (Battelle Memorial Institute)  
W. R. Major, R. J. Kratzke (Naval Facilities Engineering Service Center)

**ABSTRACT:** Battelle constructed and operated a 500-yd<sup>3</sup> biopile to treat diesel and jet-fuel contaminated soil at the Marine Corps Base Hawaii (MCBH), Kaneohe Bay, Hawaii. Approximately 500 yd<sup>3</sup> of soil contaminated with diesel and oil hydrocarbons, mostly JP-5, was treated in a temporary biopile cell. Soils came from underground storage tank removal actions around the U.S. Marine Corps Base, Hawaii. The average initial contamination level was 1550 mg/kg. The biopile was operated for seven months. Eight soil samples were collected in three sampling events. After 63 days of treatment, the average total petroleum hydrocarbon as diesel (TPHD) content in the biopile soil was reduced 57.1% from an initial average concentration of 1,549 mg/kg to 665 mg/kg. After 145 more days of treatment, the average soil TPHD content was reduced an additional 11% to an average concentration of 590 mg/kg. The overall TPHD reduction over the 209-day period was 61.9%. The average soil TPH as oil (TPHO) fraction declined from an initial value of approximately 1,080 mg/kg to 561 mg/kg over the first 60 days and an additional 91.4% over the next 145 days. Seven of the eight final soil samples were below detection limits for TPHO.

The final TPHD levels were above the 200 mg/kg level required by the Hawaii Department of Health for off-site landfill cover use. However, the concentrations were below the regulatory limits for backfill at former UST sites. Thus, the treated soil could be disposed on site as backfill at existing UST sites.

The temporary biopile design consisted of a 50-ft by 60-ft pad constructed on an existing concrete slab. The pad was made using a 60-mil high-density polyethylene liner secured to a treated wood frame. The aeration system supplied ambient air via a 1 1/2 hp regenerative blower through three evenly spaced aeration legs. To minimize moisture losses, the soil pile was covered with a 12-mil cover. The soil temperature and oxygen, carbon dioxide, and hydrocarbon levels in the soil gas were monitored via seven monitoring points installed during construction. Microbial activity was measured by conducting respiration shut-down tests. Data linked respiration rate to hydrocarbon levels in the soil and soil gas.

## MINERAL INSULATING OIL BIODEGRADATION

*Duane Graves* (IT Corporation, Knoxville, Tennessee)

*C. G. Rickerson and Darahyl Dennis* (Georgia Power Company, Atlanta, Georgia)

*Todd Watkins, William Garrett, and David Morris* (Southern Company Services, Inc., Birmingham, Alabama)

**ABSTRACT:** Dielectric fluid or mineral oil has replaced PCB oil as the insulating medium in electrical transformers. Although the environmental impact resulting from transformer leaks has been reduced by eliminating PCB, soil contaminated with mineral oil still requires remediation. A field demonstration project evaluated mineral oil biodegradation in soil using several biological treatment regimes. The results demonstrate the extent of oil biodegradation that can be expected, the change in chemical composition of mineral oil resulting from biodegradation, the rate of biodegradation, the key engineering considerations required to achieve mineral oil biodegradation, and the resistance of residual mineral oil to chemical oxidation using ozone.

### INTRODUCTION

As part of the Tailored Collaboration Program within the Electric Power Research Institute (EPRI) a pilot-scale evaluation of mineral oil biodegradation was conducted. Remediation of mineral oil contaminated soil is problematic throughout the United States because current practice involves excavating and landfilling the contaminated soil until clean soil is encountered. The cost of accepted remediation practices often exceeds the environmental risk of mineral oil in soil (Quinn and Murarka, 1996). Although mineral oil is nontoxic, poorly soluble in water, and contains very few volatile hydrocarbons (Lewis, 1992; Quinn and Murarka, 1996), it is usually regulated under the same guidelines that apply for fuel hydrocarbons.

The biodegradation of mineral oil is very poorly characterized. Langbehn and Steinhart (1995) reported that resistant oxidation products are formed during mineral oil biodegradation. Bewley et al. (1990) documented biodegradation of 38 to 51 percent of the total petroleum hydrocarbon (TPH) with greater biodegradation of specific classes of hydrocarbons. This project evaluated the performance of bioremediation for the treatment of mineral oil in soil and then examined the chemical oxidation of residual hydrocarbons using ozone.

### MATERIALS AND METHODS

Commercially available products and equipment were used during the demonstration. Analytical methods used to monitor progress in the treatments were standard US EPA approved methods or modifications of these methods to improve accuracy or reliability of the methods.

The pilot demonstration site was located at a coal fired power generating station near Albany, GA. The soil piles were constructed with three gravel aeration layers and two soil layers (Figure 1). The gravel layers were 4 to 6 inches thick. Aeration piping (one inch diameter, 0.01 inch slot width PVC pipe) was buried in each gravel layer. Soil layers were 12 to 16 inches thick. The soil piles were constructed from bottom to top with the following layers: gravel, soil, gravel, soil, gravel, and plastic cover. Each pile contained approximately 9 cubic yards of soil.

Aeration piping in the top and bottom gravel layers was connected to the vacuum end of a 1/10 horsepower blower. Each blower was piped with 1 inch solid PVC pipe to service six soil piles. For anaerobic treatment, air flow to the cell was shut off with a PVC ball valve. Twenty-four feet of half-inch irrigation tubing was placed on top of each soil pile. Soil was irrigated whenever soil moisture dropped below 5 percent by weight.

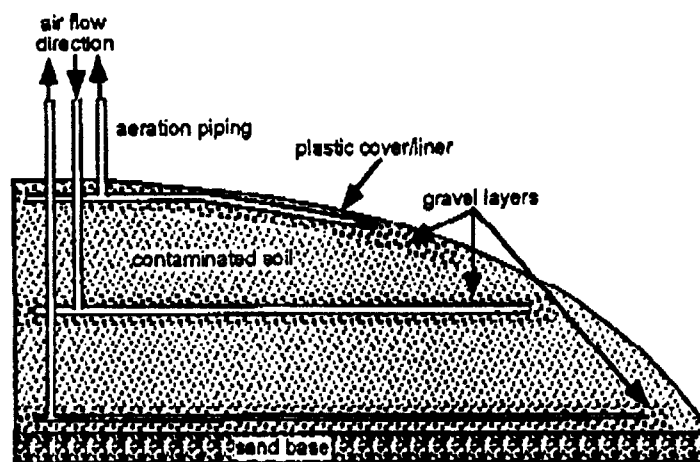


FIGURE 1. Diagram of Soil Treatment Pile Construction

Mineral oil, Univolt 60 (Exxon), was added to the soil to achieve a concentration of approximately 5,000 mg/kg above the residual concentration in the soil. A backhoe homogenized the soil following contamination with mineral oil. Soil was further amended with materials to enhance mineral oil biodegradation. The following treatments were established: Treatment 1, aeration and moisture with mineral oil; Treatment 2, nutrients, moisture, and aeration with mineral oil; Treatment 3, nutrients, moisture, cycled from aerobic to anaerobic with mineral oil; Treatment 4A, nutrients, moisture, and aeration with mineral oil supplemented with molasses; Treatment 4B, nutrients, moisture, and aeration with mineral oil supplemented with hydrated lime to give a target pH between 8 and 9; Treatment 4C, nutrients, moisture, and aeration with mineral oil supplemented with molasses and hydrated lime. Soil samples were collected monthly from each soil layer in each pile and composited. Monthly analyses included the mineral oil in triplicate composite samples, microbial density, nutrients (ammonia and phosphate), pH, and soil moisture.

Several different methods were used to quantify mineral oil and its constituent chemicals. Methylene chloride soil extracts were subjected to modified Method 8015 and an alumina gel fractionation to separate aliphatic, aromatic, and polar constituents. Each fraction was analyzed by gas chromatography to determine the percentage and concentration of each fraction in the extracted mineral oil.

US EPA Method 418.1 was conducted without any modifications to the method, however, the analytical laboratory was required to perform silica gel extracts until no further change in total petroleum hydrocarbon concentration was detected. ASTM Method D2887 simulated the fractional distillation of fresh mineral oil and the residual mineral oil in the treated soil.

Microbial density, ammonium, and phosphate in each treatment cell were determined monthly using standard methods. Soil moisture and temperature probes were buried in each pile and used to make field measurements of soil moisture and temperature. Soil pH was determined electrometrically using a pH electrode. Ozone (1 to 3.5 percent by volume) was generated from oxygen using an Ozone Generator (PCI Ozone Corporation, MA).

## RESULTS

The results document mineral oil biodegradation, the susceptibility of various mineral oil components to biodegradation, and the ancillary changes in soil chemistry and microbiology that occurred in conjunction with mineral oil biodegradation. Mineral oil concentrations were determined in triplicate monthly samples from each treatment. Results from mineral oil analyses obtained by Method 8015 modified are shown in Table 1. The total mineral oil concentration declined by statistically significant levels in four of six treatments (Table 1).

**TABLE 1. Degradation Rates and Hydrocarbon Removal Calculations**

Time (months)	Aerobic (mg/kg)	Aerobic & Anaerobic Nutrients (mg/kg)	Molasses (mg/kg)	Lime (mg/kg)	Molasses & Lime (mg/kg)
0	7,213	6,650	6,618	7,273	6,877
1	2,960	4,057	4,043	3,623	4,523
2	2,990	5,203	4,277	2,903	4,767
3	2,143	4,490	3,600	2,913	3,640
4	2,353	4,713	5,063	3,113	3,887
Deg. Rate (day <sup>-1</sup> )	0.0297	0.0165	0.0164	0.0232	0.0140
Half-life (days)	23	42	42	30	50
Percent Decrease	67%	29%	23%	57%	43%
Statistical Signif. ( $\geq 0.05$ )	signif	not signif	not signif	signif	signif

Degradation rate calculated using a first order equation,  $C_t = C_0 e^{-kt}$  and Initial and Month 1 data.

Half-life calculated as  $\ln 2 / \text{rate}$ .

Figure 2 shows mineral oil biodegradation presented as mean concentrations with 95 percent confidence intervals plotted against time. As seen in Figure 2, the change in mineral oil concentration, measured by U. S. EPA Method 418.1, was biphasic with the most mineral oil degradation occurring within the first month followed by very little degradation during the next three months. Very similar trends were observed when the samples were analyzed by either Method 8015 or Method 418.1. The percent reduction was not as great when calculated with Method 418.1 results but otherwise the two methods corresponded reasonably well.

Biodegradation rates were calculated by fitting the initial and first month mineral oil concentration results to a first order decay equation. Subsequent data were excluded from rate calculations since mineral oil biodegradation essentially ceased in all treatments except the pH adjusted treatment. Table 1 provides the calculated biodegradation rates from each treatment. Mineral oil biodegradation half-lives ranged from 23 days to 53 days.

Alumina gel fractionation of the methylene chloride soil extracts revealed that approximately 20 percent of the total hydrocarbon behaved as though it was aromatic. The remainder behaved like aliphatic hydrocarbons (Figure 3).

Figure 3 shows the relative proportions of aliphatic and aromatic compounds in soil extracts immediately after contamination with mineral oil and after one month of treatment. A dramatic decrease in the percentage of aromatic hydrocarbons was observed in all treatments except the molasses amended treatment.

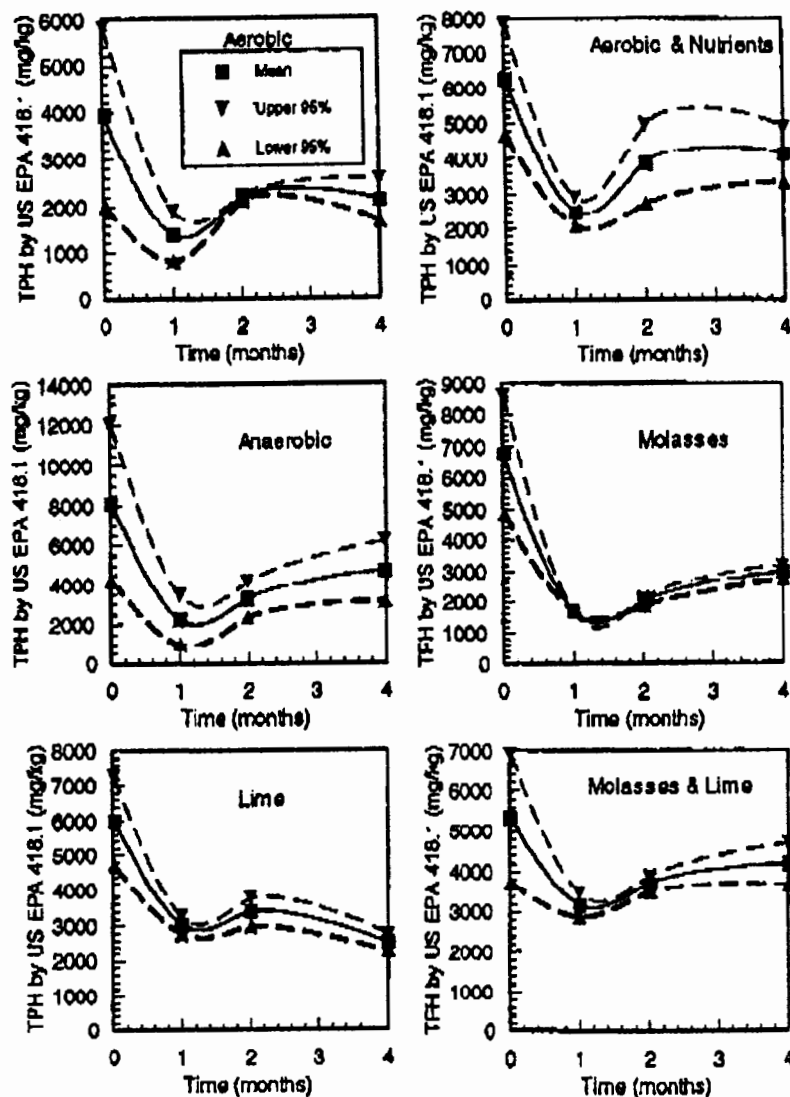


FIGURE 2. Mineral oil biodegradation.

These observations demonstrate that the aromatic fraction of the mineral oil was more susceptible to biodegradation than the aliphatic fraction. Consequently, the concentration of lower molecular weight mineral oil constituents that are likely to be the most hazardous, the most soluble, and the most mobile are quickly biodegraded to low concentrations. This phenomenon



implies that the residual mineral oil, even at relatively high concentrations, is less toxic, less soluble, less volatile, and less hazardous.

Changes in the chemical nature of mineral oil during treatment was evaluated by simulated fractional distillation using ASTM Method D2887. Figure 4 shows that the proportion of lighter hydrocarbons declined and the proportion of heavy hydrocarbons increased during biodegradation.

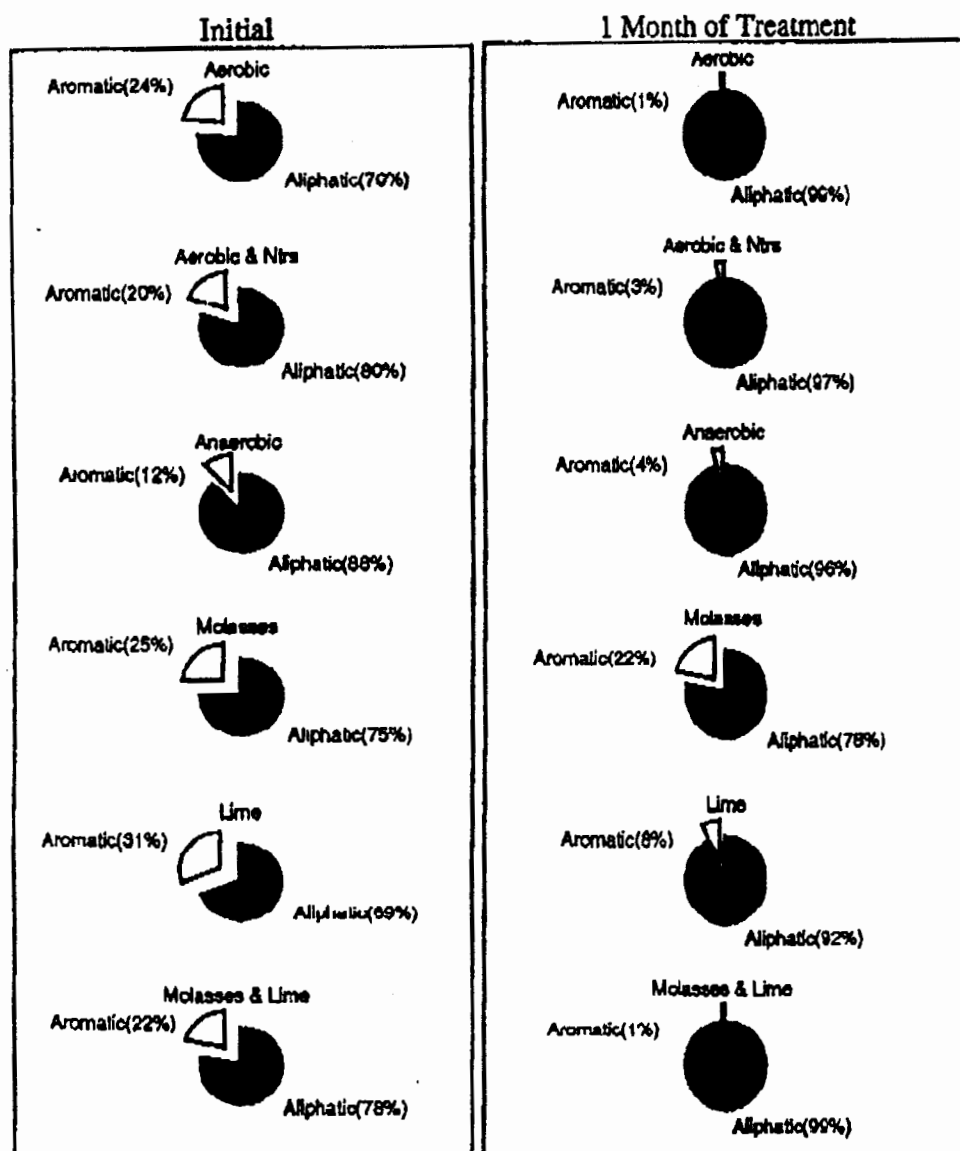


FIGURE 3. Preferential Biodegradation of Mineral Oil Components

The biotreated soil was exposed to ozone to chemically oxidize the residual hydrocarbon that was not biodegraded. Treatment of soil with 18 parts ozone per part hydrocarbon resulted in an additional 18.5 percent reduction in residual mineral oil content. At least 1.2 liters of a 3 percent ozone atmosphere are required to supply enough ozone to oxidize one mg of oil. Generating ozone from air will result in a much more dilute ozone source containing about 0.6

percent ozone. Meeting the stoichiometric requirement for ozone per mg of oil will require 6 liters of ozone-containing atmosphere using air as the source gas.

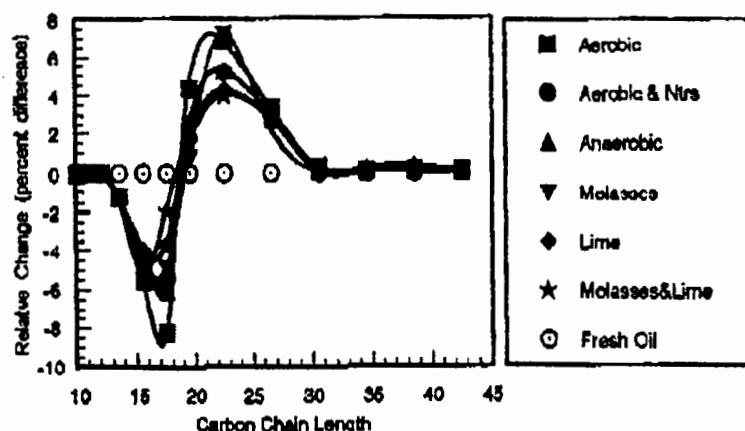


FIGURE 4. Proportional Changes in Mineral Oil Composition Determined by Fractional Distillation of Fresh and Biodegraded Mineral Oil.

### CONCLUSIONS

Testing defined the likely performance of bioremediation for treating mineral oil in soil. Although complete removal was not achieved, the results document the elimination of aromatic and lower molecular weight hydrocarbons which are of more environmental concern than heavier, poorly biodegradable aliphatic hydrocarbons. If mineral oil remediation is regulated based on risk reduction and lack of environmental impact, bioremediation seems to be an effective and efficient treatment technology. Mineral oil concentrations can be reduced by approximately 50 percent and the risk associated with the residual mineral oil remaining in the soil after treatment will be diminished. Ozone oxidation of mineral oil in soil provided minimal additional concentration reduction with an unfavorable ratio of ozone to hydrocarbon.

### REFERENCES

- Bewley, R. J. F., D. Ellis, and J. P. Rees, 1990. "Development of a Microbiological Treatment for Restoration of Oil Contaminated Soil." *Land Degrad.* 2:1-11.
- Langbehn, A. and H. Steinhart, 1995. "Biodegradation Studies of Hydrocarbons in Soils by Analyzing Metabolites Formed." *Chemosphere* 30: 855-869.
- Lewis, R. J., 1992. *Sax's Dangerous Properties of Industrial Materials, Vol. III*. Van Nostrand Reinhold, New York. pp. 2428-2430.
- Quinn, A. and I. Murarka, 1996. Electric Power Research Institute. Personal Communication.





**DIVISION OF ENVIRONMENTAL PROTECTION**

1356 Hansford Street  
Charleston, WV 25301-1401

GASTON CAPERTON  
GOVERNOR

LAIDLEY ELI McCOY, Ph.D.  
DIRECTOR

January 13, 1997

Mr. Donald K. Emig  
Chemical Leaman Tank Lines, Inc.  
102 Pickering Way  
Exton, Pennsylvania 19341-0200

Certified Mail  
Return Receipt Requested

Dear Mr. Emig:

Enclosed is a hard copy of a revised Draft Consent Order HW-533-96 which reflects the general agreement reached between us during the meeting of January 7, 1997. A copy of this order was faxed to you on January 13, 1997.

Please contact me at (304) 558-2505 prior to January 31, 1997 to discuss the order so we may enter a final order resolving this matter.

Sincerely,

Carroll Cather,  
Environmental Resource  
Specialist III

Enclosed Order

cc: H. Michael Dorsey, CME Asst. Chief  
Tom Fisher, Inspector Supervisor  
Henry Haas, Inspector  
EPA Region III



**DIVISION OF ENVIRONMENTAL PROTECTION**

1356 Hansford Street  
Charleston, WV 25301-1401

GASTON CAPERTON  
GOVERNOR

LAIDLEY ELI McCOY, Ph.D.  
DIRECTOR

**ORDER**

**ISSUED UNDER THE**

**HAZARDOUS WASTE MANAGEMENT ACT**

**CHAPTER 22, ARTICLE 18**

**OF THE WEST VIRGINIA CODE, AS AMENDED**

**Order Number HW-533-96**

To: Dr. Donald K. Emig  
Chemical Leaman Tank Lines, Inc.  
102 Pickering Way  
Exton, Pennsylvania 19341-0200

**ATTENTION: DR. DONALD K. EMIG**

This Order is issued by the Director of the West Virginia Division of Environmental Protection, through his authorized representative, the Chief of the Office of Waste Management, under the authority of the West Virginia Code, as amended, Chapter 22, Article 18, Section 15 to Chemical Leaman Tank Lines, Inc. (hereinafter, "CLTL"). The Director has adopted and incorporated by reference the applicable Sections of 40 CFR parts 260 through 279 into the Hazardous Waste Management Rule (hereinafter, "47 CSR 35").

**BASIS FOR ORDER**

As the result of a Compliance Evaluation Inspection Report and in support of this Order, the Chief hereby finds the following:

- A) This site, located on Route 25, in Institute, West Virginia, was formerly owned and operated by CLTL which was a tanker truck dispatching, washing and maintenance facility. The facility is currently owned and operated by Quala Systems, Inc.
- B) In August of 1995, CLTL undertook remedial activities at the site involving the excavation and removal of drums which had been buried during past operations. Vector Enterprises, Inc. (hereinafter, "VEI") was employed by CLTL for the following remedial activities at the site: removal, disposal and treatment of approximately 490 buried drums, which generated approximately 2,000 cubic yards of contaminated soil, approximately 500 cubic yards of other hazardous waste materials, and approximately 19,000 gallons of contaminated wastewater. The West Virginia Division of Environmental Protection (hereinafter, "WVDEP") assigned United States Environmental Protection Agency (hereinafter, "EPA") identification number WVR000001719 to CLTL to encompass the remedial activities and subsequent hazardous waste generation at the site.
- C) VEI, on behalf of CLTL, requested an Emergency Permit for these remedial activities at the site. This permit was issued by WVDEP-Office of Waste Management on August 28, 1995. A second Emergency Permit was issued on November 01, 1995. The second Emergency Permit expired on January 29, 1996.
- D) This permit allowed the (1) demolition of existing drum storage pad; (2) contaminated soil removal; (3) drum removal and disposal; (4) staging and treatment of soil, specifically general bioremediation of low level contaminated soil in six (6) biocells.
- E) CLTL and/or VEI conducted operations as stated in the permit but encountered a greater than expected number of drums, some of which were punctured during excavation, which generated much more contaminated soil than anticipated and thereby reduced operating room at the site because of the additional staging and storage area required for the contaminated soil.
- F) On August 14, 1996, authorized representatives of the Chief conducted an Inspection of the operations and found the following violations of 47 CSR 35 and the Emergency Permit which resulted in the issuance of a Notice of Violation and a referral to the Enforcement Unit:
  - 1. **The facility has violated the terms of the emergency permit at a minimum Sections of Part II Subsections: F-3, F-4, F-5, F-8, F-10, I-I as referenced by 40 CFR Section 270.1 et. seq., as referenced by 47 CSR 35.** VEI/CLTL deviated from the permit conditions regarding the biocell construction. Section 3 of the permit specified that the height of the pile would be no more than two to three (2-3) feet above the ground level. During the referenced inspection, the height of the piles at the site were on an average of six (6) feet above the ground level.
  - 2. **The facility disposed of hazardous waste without a permit in violation of 40 CFR Section 270.1 et. seq., as referenced by 47 CSR 35.**

3. **The facility has abandoned hazardous waste piles without a permit. This is in violation of 40 CFR Section 270.1 et. seq., as referenced by 47 CSR 35.**
4. **The facility has failed to maintain and operate hazardous waste piles in accordance with 40 CFR Section 264.250 et. seq., as referenced by 47 CSR 35.**
5. **The owner/operator has failed to obtain a hazardous waste post-closure permit for hazardous waste piles (since the site has not been remediated/clean closed), in violation of 40 CFR Section 270.1 et. seq. as referenced by 47 CSR 35.**
6. **The facility failed to maintain and operate to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment in violation of 40 CFR Section 264.31 as referenced by 47 CSR 35.**

CLTL abandoned the remedial activities in January of 1996 in that the piles were to be covered at all times to prevent infiltration of rainwater. CLTL allowed the piles to exist uncovered and allowed weeds to grow up through the liner (height of weeds is approximately 2-3 feet). There was no protection from the elements such as wind and rain. Additionally, the biocells were to be maintained with a one (1) foot high berm surrounding each pile. The bottom liner was to be placed over hay bails and then topped with soil to maintain the integrity of the enclosed cell for the treatment of the piles. The retaining berms had eroded away from lack of maintenance. There were pits at the end of each pile and the collected waters (run-on and/or run-off, leachate generated) were standing lagoons with streamlets exiting the piles to the surface waters, groundwaters and soils in the area. The equipment used in the remediation of the piles was inactive and in disrepair. The equipment had not been maintained and appeared unused since it was first installed.

- G) **A phone conversation between Roy Peterson of CLTL and an authorized representative of the Chief took place on August 16, 1996 at 1300 hours during which CLTL stated that in March of 1996, they had sought to complete bio-remediation of the waste piles and, to that end, had requested a third emergency permit. Authorized representatives of the Chief denied the permit request because of the delays encountered in the bio-remediation of the waste piles under the two previous permits. CLTL was told that additional remedial activities were to be conducted through the mechanism of a hazardous waste consent order. CLTL believed that, in March of 1996, they were close to achieving the required levels for cleanup and sought to sample the piles to define remaining 'hot spots' and then remedy the 'hot spots'. CLTL final plans were to flatten the piles and pave them to provide for addition parking for the Quala Systems, Inc. operations. Authorized representative of the Chief, however, have determined that CLTL's sampling plan for the waste piles was not adequate.**
- H) CLTL represents that the primary delay was the fault of the remediation contractor, VEI, which failed to perform work at the site to the satisfaction of CLTL. The Chief also notes that CLTL did take actions to prevent additional contamination after receipt of the referenced Notice of Violation issued from the August 14, 1996 Inspection.
- I) On January 7, 1997, CLTL met with authorized representatives of the Chief and agreed to provide the Chief with a copy of a revised plan which contains sampling protocol to more adequately assess the waste piles at the site. **Also, at the meeting, CLTL strongly disagreed with three of the violations cited above. Specifically, CLTL disagrees with Violations #2, #3 and #5 in that CLTL denies intending to dispose of hazardous waste or abandon the hazardous waste piles; and CLTL further contends that the application for a post-closure permit would appropriately follow the termination of the biotreatment period.**

- J) **On January 10, 1997, the Chief's authorized representatives provided CLTL with comments to the bioremediation pile sampling plan discussed at the January 7, 1997 meeting. On January 24, 1997, CLTL provided the Chief with a sampling plan adequate to meet the required sampling protocol.**

#### **REQUIREMENTS OF ORDER**

Now, therefore, in accordance with Chapter 22, Article 18, Section 15 of the Code, it is hereby agreed between the parties and **ORDERED** by the Chief as follows:

- 1) Upon the effective date of this Order, and for the violations cited in this Order, CLTL agrees to an administrative settlement of \$56,000.00 (fifty six thousand dollars). A portion of the administrative settlement, \$29,500.00 (twenty-nine thousand, five hundred dollars) shall be paid to the West Virginia Hazardous Waste Management Fund within fifteen days of the effective date of this Order. The remainder \$26,500.00 (twenty-six thousand, five hundred) shall be held in abeyance and remain in the possession of CLTL for the duration of this Order. CLTL shall forfeit the amount held in abeyance in the event that CLTL fails to implement the final approved sampling plan as referenced in Paragraph J of the Basis for Order of this Order.
- 2) In the event that the analytical results of the sampling plan identified in Paragraph I above meet or exceed contaminant levels established in EPA's Land Disposal Restrictions (LDR), CLTL shall obtain an Emergency Permit from the Chief for a final attempt at bioremediation of the waste pile contaminants. At the termination of the Emergency Permit Period, CLTL shall resample the waste piles using a second sampling plan identical to the sampling plan in Paragraph I above in the number of samples and the parameters selected. If the analytical results of the implementation of the second sampling plan remain at or above LDR levels, CLTL shall ship the waste pile material which meets or exceeds the LDR levels off-site for lawful treatment, storage and disposal, within 90 days of receipt of the analytical results.
- 3) **CLTL shall apply for a closure and post-closure permit for the site in accordance with Subpart G of Part 265 of 40 CFR. CLTL shall submit a closure plan and a post-closure plan for the site in accordance with Subpart G.**
- 4) **CLTL shall conduct a groundwater monitoring regimen as specified in the post-closure plan.**

**GENERAL PROVISIONS**

- 1) The Chief reserves all rights and defenses which he may have pursuant to any legal authority as well as a right to raise, as a basis for supporting such legal authority or defenses, facts other than those enumerated in the Basis for Order.
- 2) CLTL hereby waives its rights to appeal this Order under the provisions of Chapter 22, Article 18, Section 20 of the Code. Under this Order, CLTL agrees to undertake all actions required by the terms and conditions of this Order and consents to and will not contest the Chief's jurisdiction regarding this Order. However, CLTL does not admit to any factual and legal determination made by the Chief in this Order and reserves all rights and defenses available regarding liability and responsibility in any proceedings regarding the facility other than proceedings, either administrative or civil, to enforce this Order.
- 3) This Order becomes effective on the date indicated and shall terminate upon notification from the Chief that CLTL has fulfilled the requirements as set forth in the Requirements of Order.

\_\_\_\_\_  
Effective Date

\_\_\_\_\_  
Authorized Representative  
Chemical Leaman Tank Lines, Inc.

  
\_\_\_\_\_  
B. R. Smith, P.E.  
Chief  
Office of Waste Management

### **ADMINISTRATIVE SETTLEMENT CALCULATION MATRIX**

Each of the factors, Potential for Harm and Extent of Deviation from the requirement, forms one of the axes of the administrative settlement calculation matrix. The matrix has nine cells, each cell contains an administrative settlement range. The specific cell is chosen after determining which category (major, moderate, or minor) is appropriate for the Potential for Harm factor, and which category is appropriate for the Extent of Deviation factor.

The lowest cell (minor Potential for Harm, minor Extent of Deviation) contains a maximum administrative settlement of \$499. The highest cell (major Potential for Harm, major Extent of Deviation) is limited by the maximum statutory administrative settlement allowance of \$25,000 per day for each violation. The complete matrix is illustrated below. The administrative settlement amounts are based on EPA Guidelines.

		EXTENT OF DEVIATION		
		MAJOR	MODERATE	MINOR
<b>POTENTIAL FOR HARM</b>	<b>MAJOR</b>	\$25,000 TO \$20,000	\$19,999 TO \$15,000	\$14,999 TO \$11,000
	<b>MODERATE</b>	\$10,999 TO \$8,000	\$7,999 TO \$5,000	\$4,999 TO \$3,000
	<b>MINOR</b>	\$2,999 TO \$1,500	\$1,499 TO \$500	\$499 TO \$100

**VIOLATIONS SUMMARY**  
**FOR**  
**CLTL, Inc.**

<b>Violation</b>	<b>Potential</b>	<b>Deviation</b>	<b>Amount</b>
1) Permit Violation	Moderate	Major	\$ 8,500
2) Disposal	Moderate	Major	\$10,500
3) Abandon Piles	Moderate	Major	\$ 8,000
4) Failure to Maintain Piles	Moderate	Major	\$10,500
5) No Post-Closure Permit	Moderate	Major	\$ 8,000
6) Failure to Prevent Releases	Moderate	Major	\$10,500
Total Amount of Administrative Settlement:			\$56,000
Amount Held in Abeyance:			\$26,500
Amount Payable to the West Virginia Hazardous Waste Management Fund:			<b>\$29,500</b>





Via U.S. Mail, Certificate of Mailing Obtained

July 15, 1999

West Virginia Division of Environmental Protection  
Office of Waste Management  
ATTN: Mike Dorsey  
1356 Hansford Street  
Charleston, WV 25301

RE: Request to Deactivate EPA Generator Identification Number WVR 000 001 719  
Chemical Leaman Tank Lines, Inc., Institute, West Virginia

Dear Mr. Dorsey:

This is to request deactivation of EPA Generator ID Number WVR 000 001 719 for the Chemical Leaman Tank Lines, Inc. facility located at Route 25, Institute, West Virginia. This facility is not currently generating hazardous waste.

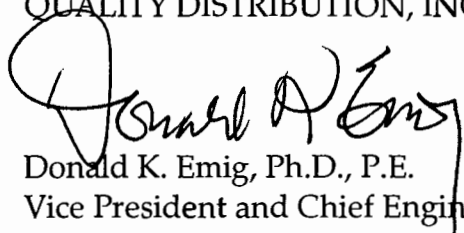
Due to recent corporate acquisitions and restructuring, Chemical Leaman Tank Lines, Inc. has become a wholly owned subsidiary of Quality Carriers, Inc. (QCI). QCI, in turn, is a wholly owned subsidiary of Quality Distribution, Inc., which is submitting this information on behalf of QCI.

If the EPA Generator Identification number needs to be reactivated in the future, correspondence to your office will indicate the name change.

If you have any questions, please contact Dave Bielecki, or me, at 610-363-4499, or at 102 Pickering Way, Exton, PA 19341.

Very truly yours,

QUALITY DISTRIBUTION, INC.

  
Donald K. Emig, Ph.D., P.E.  
Vice President and Chief Engineer  
Environmental Affairs

Enclosure

**RECEIVED**

JUL 26 1999

Division of Environmental Protection  
Office of Waste Management  
Notifications



Office of Waste Management  
1356 Hansford Street  
Charleston, WV 25301  
Telephone: (304) 558-5393  
Fax: (304) 558-0256

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## West Virginia Division of Environmental Protection

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Cecil H. Underwood  
Governor

Michael P. Miano  
Director

June 30, 1999

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
Z 316 375 808

Mr. Donald K. Emig, Ph.D., P.E.  
Vice-President and Chief Engineer  
Enviropower, Inc.  
102 Pickering Way  
Exton, PA 19341-0200

RE: Chemical Leaman Tank Lines, Inc.  
EPA ID No: WVR000001719

SUBJECT: Permit Issuance

Dear Mr. Emig:

Enclosed, please find the fact sheet and addendum along with Permit Number WVR000001719 for Chemical Leaman Tank Lines, Inc., Institute, West Virginia facility.

The Division of Environmental Protection, Office of Waste Management, did not receive any comments on the draft during the period of public notice (May 5 through June 18, 1999) and the permit, as issued is substantially unchanged from the draft.

Should you have any questions or if I may be of assistance, please feel free to contact me at the numbers provided on this letter.

Sincerely,

W. John Janicki, Permit Writer  
Hazardous Waste Management Section  
Office of Waste Management

WJJ:cm  
Enclosures

c: Robert Greaves, US EPA Region III (cover w/attachments) ✓  
Sharon McCauley, US EPA Region III (cover letter only)  
G. S. Atwal, OWM Permitting (cover letter via e-mail)  
Barbara Taylor, OWR (cover letter via e-mail)  
Hank Haas, OWM CAER (cover w/all attachments)  
Lucy Pontiveros, OAQ (cover w/all attachments)  
Ira Baldwin, PSC (cover letter only)  
Joseph Wyatt, HHR (cover letter only)  
Jim Youngblood (cover letter only)



**FACT SHEET**  
*for*  
**CHEMICAL LEAMAN TANK LINES, INC.**  
**EPA ID NUMBER: WVR000001719**

**PERMIT FOR POST-CLOSURE CARE**

**I. OVERVIEW**

This fact sheet, prepared by the West Virginia Division of Environmental Protection, Office of Waste Management (OWM), in support of and accompanying the draft permit, for Chemical Leaman Tank Lines, Inc., (Permittee), located in Kanawha County along WVa. State Route 25, between Nitro and Institute, was prepared in accordance with Section 11.6 of the Hazardous Waste Management Rule (HWMR).

The OWM intends to issue a Permit as a condition of Hazardous Waste Consent Order #HW-533-96 which will bind the Permittee to perform post-closure care and the associated groundwater monitoring for those areas of the facility which may have been effected by releases of hazardous constituents originating from pre-RCRA (Resource Conservation Recovery Act) waste disposal and RCRA remedial activities conducted at the site. These RCRA remedial activities consisted of; 1) excavation of buried drums containing waste, 2) On-site treatment of the lesser contaminated soils which were generated during excavation, and 3) On-site placement of the treated soils which were below the land disposal restrictions expressed in 40 CFR 268 for the hazardous constituents present.

**II. AUTHORITY**

**(a) Federal Law:**

The United States Environmental Protection Agency (EPA), under Section 3006(b) of the Resource Conservation and Recovery Act of 1976 (RCRA), has authorized the State of West Virginia to administer and enforce a hazardous waste program, which excludes some provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA) in lieu of the federal program under RCRA. EPA will continue to administer and enforce those excluded provisions of HSWA until the state receives full RCRA authorization.

(b) State Law:

Article 18, Chapter 22 of the West Virginia Code, Hazardous Waste Management Act, hereinafter referred to as the "ACT", designates the Division of Environmental Protection (DEP) as the State lead regulatory agency for hazardous waste management and section 7(6), Article 1, Chapter 22 of the State Code charges the OWM with administering and enforcing, under the supervision of the director, DEP, the provisions of the ACT.

### **III. PURPOSE OF PERMITTING PROCESS**

The permitting process provides an opportunity for the public, OWM, and other agencies to evaluate the Permittee's ability and commitments to comply with the ACT and the rules promulgated thereunder.

Section 11.5 of the HWMR requires the OWM to prepare a draft permit which sets forth, in one concise legal document, all the applicable requirements that the Permittee must comply with during the ten year duration of the permit.

### **IV. PROCEDURES FOR REACHING A FINAL DECISION**

- (a) Pursuant to Section 11.8.b of the HWMR, the public and other agencies are given forty-five (45) days to review and comment on the Administrative Record which consists of the application, fact sheet, draft permit, and other documents contained in the supporting file for the draft permit. A copy of these documents will be available for public review at the DEP, OWM, 1356 Hansford Street, Charleston, WV.

The comment period will begin on May 5, 1999, and will end on June 18, 1999. All relevant comments should be submitted in writing to the attention of James Waycaster, OWM, Public Information Office, 1356 Hansford St., Charleston, WV 25301.

- (b) If, during this forty-five (45) day comment period, the Chief, OWM, finds sufficient public interest or if he receives a written notice of opposition to the draft permit and a request for a public hearing, a public hearing will be held. A Public Notice of the hearing shall be given thirty (30) days before the scheduled hearing. The hearing shall be scheduled at a location convenient to the residents of Nitro and Institute, West Virginia.

Any person requesting a public hearing should include all reasonably available arguments, factual grounds, and supporting material. The requests for a hearing should be addressed to: Chief, OWM, 1356 Hansford Street, Charleston, WV 25301.

- (c) The Chief will consider the following in the permitting decision: 1) relevant written comments received during the comment period, 2) relevant oral or written statements received during the public hearing (if held), 3) regulatory requirements of the HWMR and, 4) OWM permitting policies.
- (d) At the time that the final permit is issued, the Chief shall respond to all comments received. The response will briefly describe and address all significant comments raised during the public comment period or during the public hearing. The response to comments will also specify which provisions, if any, of the draft permit have been changed and the reasons for the change. The response to comments shall be sent to any person who requested the response.

Any person aggrieved or adversely affected by the action of the Chief concerning the permit has the right of appeal as provided under Section 20 of the ACT.

The permit shall become effective immediately upon issuance by the Chief.

The agency contact person for this permit is W. John Janicki, WV Division of Environmental Protection, OWM, 1356 Hansford Street, Charleston, WV 25301, (304) 558-5393 or TDD Numbers (800) 422-5700 or 558-1236.

## **V. FACILITY DESCRIPTION**

Chemical Leaman Tank Lines, Inc. (CLTL) began trucking related operations at this location on the northern side of State Route 25 across the highway from Rhone-Poulenc wastewater treatment plant in 1961 and continues to operate a trucking and tanker wash rack. The trucking related operations at this location currently employs 62 people which include both drivers domiciled at this terminal and employees working day, evening, and night shifts for Montgomery Tank Lines and Quala Systems, Inc., companies affiliated with CLTL.

The remediation and the associated area of the facility were assigned a new EPA ID Number, WVR000001719, to cover the hazardous waste generation and the subsequent on-site treatment activities allowed under the emergency permits. The original site EPA ID Number, WVD000495655, was adopted by Quala System, Inc., for the hazardous waste generated from their tank truck cleaning operations at this location.

## **VI. FACILITY STATUS**

Past hazardous waste management activities conducted at this location by CLTL have been accomplished outside of the interim status provisions of Section 11 of the ACT, and were subject only to the less stringent generator rules of RCRA. With the issuance of a permit for post-closure care, the status of CLTL will change to a TSD facility, subject to the more stringent TSD Rules of RCRA.

## VII. BASIS FOR PERMIT ISSUANCE

In 1994, the Division of Environmental Protection, Office of Water Resources inspectors, acting under the authority of Article 12, Chapter 22, of the W.Va. Code (Groundwater Protection Act) negotiated a verbal agreement with CLTL, who at that time needed a permit to discharge from their wastewater treatment plant, to conduct a site investigation of two (2) specific areas of the facility which the inspectors believed contained buried wastes. These beliefs were based on information provided to the inspectors by several former CLTL employees.

Pursuant to a long standing EPA RCRA regulatory policy, the excavation of any waste meeting the characteristics or listing of hazardous waste, regardless of date of disposal, subjects that excavator to the generator rules of RCRA; which, in W.Va. are administered and enforced by the OWM.

The investigations in 1994 and early 1995, by Vector Enterprises, Inc., the consultant acting on behalf of CLTL, through an EM survey and soil gas sampling failed to reveal any burial of drums or gross contamination in the area north of the terminal building adjacent to the wastewater treatment plant. By the agency's approval of the consultants July, 1995 site remediation plan, the OWM knowingly or unknowingly accepted the CLTL recommendation of "no further action" for this area. Although not triggering the need for remediation, groundwater samples taken from piezometers in this area of "no further action" did reveal elevated levels of the hazardous constituent lead.

These investigations did ear-mark the area east of the terminal building for remediation. The OWM accepted the CLTL estimate of only 30 to 40 drums containing waste from tanker trucks being buried in this area east of the building.

The remediation of the area to the east of the terminal building began in the late summer of 1995 under a plan approved by the OWM which had underestimated the magnitude of the project. The excavation yielded approximately 490 drums of which 163 had already leaked their contents or were ruptured during the excavation resulting in almost 9000 gallons of waste being released into this 0.10 acre area. These unplanned occurrences resulted in more than 2200 cubic yards of contaminated soil being excavated. Depth of some of the excavations approached groundwater and the OWM believes that not all hazardous constituents from the 9000 gallon release were recovered by the excavation.

The OWM, Hazardous Waste Management Section, through issuance of emergency permits of limited duration, allowed CLTL on-site treatment of the lesser contaminated soils that the OWM and CLTL contractor believed to be amenable to treatment in eight bio-remediation cells. During this period of operation, under two consecutive emergency permits, September, 1995 through January, 1996, the project didn't go well.

The contractor performing the remediation for CLTL had to make major changes to the remedial plan and both the remedial plan and the emergency permits failed to take into consideration the retarded rate for bio-remediation during winter. In January, 1996, the contractor had financial difficulties and was unable to complete the remediation.

Following expiration of the second emergency permit and lacking any formal mechanism such as a unilateral or consent order to bind CLTL to the verbal commitment of completing the remediation, the site fell into limbo. On August 14, 1996, an inspection of the facility by OWM inspectors revealed numerous releases of hazardous constituents were occurring or had occurred from the un-attended bio-remediation cells. This site inspection triggered Consent Order Number HW-533-96 which was finalized on March 6, 1997. The Order included provisions for: 1) The OWM to issue a third emergency permit allowing CLTL follow-up treatment of the partially remediated soils, and 2) allowing CLTL to keep, on-site, those soils which were treated to an acceptable level (meeting the land disposal restrictions of 40 CFR 268).

Also in this Consent Order, CLTL agreed to be permitted for post-closure care and the associated groundwater monitoring for those areas of the facility which may have been effected by releases of hazardous constituents resulting from; 1) the uncontained portion of the 9000 gallon release in the area of drum excavation, 2) two-year duration of the bio-remediation cells, and 3) approximately 2200 cubic yards of treated soils which have been allowed to remain on-site.

## **VIII. PERMIT ORGANIZATION**

The permit is divided into modules as outlined:

- Module I; Standard Conditions
- Module II; General Facility Conditions
- Module III; Post-Closure Care
- Module IV; Groundwater Monitoring Program; and
- Attachments 1 through 5, incorporated from the permit application.

Modules I and II for this permit covering only post-closure care and the associated groundwater monitoring are revised versions of Modules I and II of permits for operating TSD facilities. These two modules set forth the standard and general conditions that the OWM believes to be applicable for non-operating facilities.

Modules III and IV and the Attachments incorporated from CLTL's permit application, pertain specifically to the RCRA Post-Closure Care activities to be conducted at this location.

The Attachments compiled from the permit application which are part of the permit, include: 1) Inspection Schedule, 2) Training Plan, 3) Contingency Plan, 4) Groundwater Monitoring Plan, and 5) Post-Closure Plan.

## **IX BASIS FOR PERMIT CONDITIONS**

### **(a) Module I**

Module I of the permit is standard for all permitted treatment, storage, and disposal (TSD) facilities. This particular version of Module I, for a non-operating TSD, is a revised edition of Module I for operating permits and includes only those conditions that OWM believes to be applicable. These Standard Conditions are required by 40 CFR 270, Subpart C and are supported by the regulatory and/or statutory reference cited in the permit.

### **(b) Module II**

As in Module I, above, the OWM has made revisions to Module II, General Facility Conditions, for operating TSD permits to adapt the Module to cover only the general facility conditions for post-closure care and the associated groundwater monitoring in which the OWM believes to be applicable. In Module II of the permit, most conditions are a direct citation of a regulatory and/or statutory requirement. An exception being in permit condition II-C-3(b) and (c), the OWM as a permitting policy, has specified fifteen (15) days following an inspection for completion of remedial activity or submittal of a plan for agency approval. The OWM believes the federal rule under 40 CFR 264.15(c), requiring remediation "on a schedule which ensures that the problem does not lead to an environmental or human health hazard" is a little vague and needs further support.

### **(c) Module III**

In preparing Module III, Post-Closure Care, the OWM, because of the areas being permitted were not a perfect fit with any of the conventional RCRA land disposal units (landfill, waste pile, surface impoundment, and land treatment), used regulatory provisions which are based on 40 CFR 264, subparts K through N, for permit conditions addressing the procedures for the stock-pile area to minimize the threat to human health and the environment (vegetative cover, run-on control, and run-off measures).

The initial permit application, as submitted, lacked provisions for run-on control for the stock pile area. This inadequacy is being addressed in a schedule of compliance contained in the permit allowing ninety (90) days for installation of run-on control in accordance with a late date revision to the permit application.

Other parts of Module III, length of post-closure period, frequency of inspection, and permit modification, are supported by regulatory reference or as in the case of frequency of inspection, a commitment in the permit application.



(d) Module IV

Module IV, addressing monitoring well installation and groundwater monitoring for the area of the facility east of the terminal building bordering W.Va. State Route 25, is supported by the HWMR, 40 CFR 264, Subpart F, 40 CFR 270, and the state rules promulgated under the Ground Water Protection Act.

Because no groundwater data presently exists for this area, the OWM, in preparing Module IV, Groundwater Monitoring, incorporated provisions from both 40 CFR §264.98 (Detection Monitoring Program) and §264.99 (Compliance Monitoring Program) in an attempt to cover contingencies and minimize the need for future permit modifications to adequately cover the groundwater monitoring program. The OWM has included a provision in the schedule of compliance covering the installation of monitoring wells for the additional contingent submittal of an application for permit modification to cover corrective action for the permitted area if groundwater data evaluation triggers the need.

In determining the compliance period (40 CFR 264.96(a)) of a five-year duration, under permit condition IV-C-1-b, the OWM's logic was based on the period of OWM involvement in site remediation (1994 through 1998) as being the active life of the waste management area, assuming the groundwater monitoring program has been implemented by September, 1999.

The module also contains requirements which CLTL has made no commitments for in the permit application. The OWM believes that the constituent lead must be monitored based on groundwater sampling in the area north of the terminal building submitted in the 1995 Vector Site Remediation Plan. The permit also requires monitoring for the indicator parameters conductivity, pH and TOC.

The OWM believes that these indicator parameters will provide usable data and provide more support for data quality assurance, quality control (QA/QC) especially when hazardous constituent parameters of each well are analyzed only twice per year following the accelerated data gathering schedule which the OWM has placed in the permit. These schedules also differ from what CLTL has committed to in the permit application. The schedules which CLTL proposed in the permit application of annual sampling following the initial data gathering period of eight consecutive quarters does not meet the minimum regulatory requirement of semi-annual sampling frequency specified in the detection and compliance monitoring programs of 40 CFR 264, Subpart F, and the annual frequency as proposed cannot be allowed.



**ADDENDUM TO FACT SHEET  
for  
CHEMICAL LEAMAN TANK LINES, INC.  
EPA ID NUMBER: WVR000001719**

**PERMIT FOR POST-CLOSURE CARE**

The terms and conditions of the permit remain substantially unchanged from those announced by the public notice of May 5 through June 18, 1999, and further public participation is not required. No comments on the draft were received by the agency during this comment period.

The permit, as issued, differs only slightly from the draft that went to public notice as per the following revisions:

- 1) Page 1 of the permit, the last sentence in the second paragraph, "of 1976" was added to correctly depict the long title of RCRA (Resource Conservation and Recovery Act of 1976).
- 2) Permit Condition IV-B-2 of the permit, an error of depicting the total number of monitoring wells as being five was corrected to read six.
- 3) The last page of the permit, Permit Attachments, each attachment entry was identified as to the number of pages.
- 4) The title of Attachment 2, Training Plan, was changed to "Training Outline".